



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/677,590

10/02/2003

Brett Spivey

503

8200

7590

09/20/2006

JOHN R. ROSS  
Trex Enterprises  
10455 Pacific Center Ct.  
San Diego, CA 92121

EXAMINER

LI, SHI K

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/677,590

Applicant(s)

SPIVEY ET AL.

Examiner

Shi K. Li

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(m) because the shading of FIGs. 1, 2, 3, 4, 7, 12, 13 and 15 reduce legibility. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al. (U.S. Patent Application Pub. 2005/0071484 A1) in view of Hoang et al. (U.S. Patent Application Pub. 2004/0246896 A1) and Yamada et al. (E. Yamada et al., "106 Channelx10 Gbit/s, 640 Km DWDM Transmission with 25 GHz Spacing with Supercontinuum Multi-Carrier Source", Electronics Letters, Vol. 37, No. 25, 6<sup>th</sup> December 2001).

Regarding claim 1, Kang et al. discloses in FIG. 16 a large WDM mesh network with 28 nodes. Kang et al. suggests in paragraph [0009] using fiber for connecting the nodes. Kang et al. teaches in paragraph [0067] capacity allocation algorithm. The differences between Kang et al. and the claimed invention are (a) Kang et al. does not teach explicitly that the algorithm is executed by processor and (b) Kang et al. does not optical signal generator. Hoang et al. teaches setting up lightpath in an optical network. Hoang et al. teaches in paragraph [0011] that a

Art Unit: 2613

lightpath is a path in an optical network for which the  $\lambda$  (i.e., wavelength) does not change. Hoang et al. teaches in paragraph [0013] that an optical network device (i.e., a node) contains optical crossconnect and microprocessor for controlling the crossconnect and executing software such as routing algorithms. One of ordinary skill in the art would have been motivated to combine the teaching of Hoang et al. with the WDM mesh network of Kang et al. because a microprocessor can performs huge number of calculation and is suitable for executing algorithms. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a processor for executing algorithms, as taught by Hoang et al., in the WDM mesh network of Kang et al. because a microprocessor can performs huge number of calculation and is suitable for executing algorithms.

The combination of Kang et al. and Hoang et al. still fails to teach optical signal generator. Yamada et al. teaches in FIG. 1 a DWDM transmission system including a supercontinuum (SC) multi-carrier light source that generates 106 wavelengths. One of ordinary skill in the art would have been motivated to combine the teaching of Yamada et al. with the modified WDM mesh network of Kang et al. and Hoang et al. because the SC light source generates large number of wavelengths with uniform channel spacing. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a SC multi-carrier light source, as taught by Yamada et al., in the modified WDM mesh network of Kang et al. and Hoang et al. because the SC light source generates large number of wavelengths with uniform channel spacing.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al., Hoang et al. and Yamada et al. as applied to claim 1 above, and further in view of Takara et al. (H.

Art Unit: 2613

Takara et al., "More Than 1000 Channel Optical Frequency Chain Generation from Single Supercontinuum source with 12.5 GHz Channel Spacing", Electronics Letter, Vol. 36, NO. 25, 7<sup>th</sup> December 2000).

Kang et al., Hoang et al. and Yamada et al. have been discussed above in regard to claim 1. The difference between Kang et al., Hoang et al. and Yamada et al. and the claimed invention is that Kang et al., Hoang et al. and Yamada et al. do not teach at least 300 wavelength channels. Takara et al. teaches in FIG. 1 an optical source for 1000 channels with 12.5 GHz channel spacing. One of ordinary skill in the art would have been motivated to combine the teaching of Takara et al. with the modified WDM mesh network of Kang et al., Hoang et al. and Yamada et al. because more wavelength channels allows the network to carry more data with the same amount of fiber. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use SC light source for 1000 channels, as taught by Takara et al., in the modified WDM mesh network of Kang et al., Hoang et al. and Yamada et al. because more wavelength channels allows the network to carry more data with the same amount of fiber.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al., Hoang et al. and Yamada et al. as applied to claim 1 above, and further in view of Sirat et al. (U.S. Patent Application Pub. 2004/0208644 A1).

Kang et al., Hoang et al. and Yamada et al. have been discussed above in regard to claim 1. The difference between Kang et al., Hoang et al. and Yamada et al. and the claimed invention is that Kang et al., Hoang et al. and Yamada et al. do not teach sub-frequencies. Dawes et al. teaches in FIG. 1 to split and shift a carrier wavelength for generating sub-carriers and modulate each sub-carrier with user data. One of ordinary skill in the art would have been motivated to

Art Unit: 2613

combine the teaching of Sirat et al. with the modified WDM mesh network of Kang et al., Hoang et al. and Yamada et al. because using sub-carrier technique allows users to share a wavelength and, therefore, serves more users. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to divide a wavelength into sub-level as channel signal level, as taught by Sirat et al., in the modified WDM mesh network of Kang et al., Hoang et al. and Yamada et al. because using sub-carrier technique allows users to share a wavelength and, therefore, serves more users. Sirat et al. also teach in FIG. 1 combining a number of fibers into a smaller number of optical fibers using multiplexer. This can be done in several levels. For example, Sirat et al. teaches combining sub-carrier into a wavelength and Yamada et al. teaches in FIG. 1 combining wavelength into wavelength bands and combining wavelength bands into a WDM signal with large number of wavelengths. Sirat et al. teaches in FIG. 5 demodulators to demodulate user signals from optical sub-carrier.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2613

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl

15 September 2006



**Shi K. Li**  
**Patent Examiner**